

2/PR75

10/524425  
DT05 Rec'd PCT/PTO 15 FEB 2005

WO 2003/020199

PCT/DE2003/002653

Device for Guiding a Tympan on a Cylinder of a Printing Machine

Specification

The invention relates to a device for guiding a dressing on a cylinder of a printing press in accordance with the preamble of claim 1.

A device for mounting flexible printing plates is known from DE 197 19 559 A1, wherein a pressure roller is arranged on a holder embodied, for example, as a leaf spring, wherein the holder is connected with an insertion slider, wherein the insertion slider can be placed against a forme cylinder by means of a linear movement and in the process introduces an end of the printing plate into a fastening slit cut into the forme cylinder.

A device for pressing a dressing against a cylinder of a printing press with the aid of several rolling elements, in particular rollers, arranged along the cylinder is known from EP 0 712 725 A2.

WO 01/87613 A1 describes a method and several embodiments of a device for pressing a dressing against a cylinder of a printing press, wherein several rollers are pressed against the cylinder by an actuating means during mounting and dismounting of a dressing. The actuating means can be designed as a reversibly deformable hollow body, for example a tube, which can be charged with a pressure medium. By charging the hollow body with the pressure medium, a rigid roller support, which is substantially embodied in the form of a die, is pressed against the cylinder against the force of a spring. In one exemplary embodiment, the roller support

is embodied as a rocker or as a one-armed lever. In addition to the first rollers, which are spaced apart from each other and can be placed against the cylinder for mounting fresh dressings, another exemplary embodiment provides a plurality of second rollers, which can be placed against the cylinder for dismounting dressings. Two actuating means, which can be operated independently of each other, can be provided for placing the first and second rollers against the cylinder.

The object of the invention is based on creating a device for guiding a dressing on a cylinder of a printing press.

In accordance with the invention, this object is attained by means of the characteristics of claim 1.

The advantages to be gained by means of the invention consist in particular in that the embodiment of the support of the rolling element as an elastically bendable body results in being able to construct the device very flat, and therefore space-saving, which is very advantageous in connection with the installation conditions in a printing press. The device is resistant to dirt and more rugged than an arrangement with a support which is attached to a hinge, for example, because the hinge at the intended installation location must be protected against soiling, such as ink splatters or dust, for interference-free functioning, which entails an additional outlay. Moreover, in the course of the interaction with the actuating means acting on the support, no separate spring element is required for returning the support into its initial position after an operation of the actuating means, because of its design as an elastically bendable body the support has an inherent spring-back

property. In comparison with a device in accordance with the prior art, the proposed device clearly requires fewer components for mounting a dressing on a cylinder, in particular no insertion sliders, which introduce an end of the dressing into a fastening slit cut into the forme cylinder.

An exemplary embodiment of the invention is represented in the drawings and will be described in greater detail in what follows.

Shown are in:

Fig. 1, a device for pressing a dressing against a cylinder in the state where it is removed from the cylinder,

Fig. 2, a device for pressing a dressing against a cylinder in the state where it is placed against the cylinder.

A forme cylinder 02, on which at least one dressing 01, for example a preferably flexible printing forme 01, can be placed, rolls off on a counter-pressure cylinder 03, for example a transfer cylinder 03, in a printing press, for example a web-fed rotary offset printing press. On its surface area 04, the forme cylinder 02 preferably has at least one slit-shaped opening 06 extending longitudinally in respect to the cylinder 01, in which a beveled edge 07 placed on one end of the dressing 01 can be suspended, preferably in a positively connected manner.

A holder 08 for a support 11 is provided, spaced apart from the cylinder 02. In the preferred embodiment, a cross arm 08 which, for example, can be a rigid hollow profile of square cross section and extends along these cylinders 02, 03, is preferably located in the area in front of and between

the space between the forme cylinder 02 and the counter-pressure cylinder 03, i.e. in the gap or in the space delimited by the surface areas of the cylinders 02, 03. At least one support 11 is attached, either directly or by means of a connecting piece 09 which, for example, can be an L-shaped strip, to this holder 08, preferably designed as a cross arm 08, which has a first end 12, with which the support 11 is connected to the cross arm 08 or the connecting piece 09. The connection of the first end 12 of the support 11 is preferably provided by a connecting element 13, which can be a screw 13 or a rivet 13. In this way the first end 12 of the support 11 is not connected hingedly, but rigidly with the holder 08, in particular is clamped to the holder 08. The support 11 has a face 22, and the holder 08 has a face 23, wherein both faces 22, 23 are facing each other (Fig. 2). The faces 22, 23 are arranged spaced apart at a spacing a from each other.

On a second end 16 located opposite the first end 12 of the support 11, a rotatably seated rolling element 17 is attached in such a way that, when the rolling element 17 is placed against the forme cylinder 02, it can roll off on the surface area 04 of the latter, or on a dressing 01 resting on the surface area 04 (Fig. 2), because of which a beveled edge 07 placed on one end of the dressing 01 is pressed into an opening 06 in the surface area 04 of the cylinder 02, and a dressing 01 is pressed against the surface area 04 of the forme cylinder 02. Thus, the rotating shaft 18 of the rolling element 17 extends along the forme cylinder 02. Preferably the rolling element 17 is designed as a roll 17 or a roller 17 and, in the preferred embodiment, is suitable for

introducing a beveled edge 07 at one end of the dressing 01 into an opening 06 in the cylinder 02.

The support 11 itself is an elastically bendable, i.e. reversibly deformable body, which is preferably embodied in the shape of a blade. Thus, the support 11 can be a resilient sheet metal piece 11, which is fixedly clamped at its first end 12.

An actuating means 19 is moreover provided, wherein the actuating means 19 is preferably embodied as a reversibly deformable hollow body 19, for example as a tube 19, which can be charged with a pressure medium. When operated, i.e. for example, charged with a pressure medium, the actuating means 19 acts on the one side on the support 11 and on the other on the holder 18, because the actuating means 19 is supported on the facing surfaces 22, 23 of the holder 08 and the support 11 (Fig. 2). By operating the actuating means 19, the second end 16 of the support 11 is deflected in the direction toward the forme cylinder 02 because of the elastic bending of the support 11, and the rolling element 17 is placed against the cylinder 02 (Fig. 2), because the holder 08 remains at rest in relation to the cylinder 02, while the second end 16 of the support 11 performs a pivoting movement directed toward the cylinder 02, because of which the spacing a between the faces 22, 23 is increased. At the termination of the operation of the actuating means 19, the support 11 returns into its original position because of its elasticity, i.e. its resilient properties. As a result the rolling element 17 is again moved away from the surface area 04 of the forme cylinder 02, or from a dressing 01 resting on the

surface area 04 of the forme cylinder 02, i.e. out of contact.

If, as represented in Fig. 1, the actuating means 19 is installed between the support 11 and the cross arm 08, it is advantageous, for example, to form or attach a strip 21 on the support 11, which protects the actuating means 19 from inadvertently slipping out of, or from being removed from, its place of installation.

Thus, Figs. 1 and 2 show by way of example the same arrangement of a device for guiding, in particular pressing, a dressing 01 on a cylinder 02 of a printing press, in two different states of operation, namely in Fig. 1 in the operating state with a rolling element 17 moved away, and in Fig. 2 in the operating state with a rolling element 17 brought into contact. The proposed device can be used, for example, for mounting a dressing 01 on a cylinder 02.

For some applications, for example with an arrangement of several printing formes side-by-side in the axial direction on the surface area 04 of the forme cylinder 02, it is advantageous to arrange several supports 11 side-by-side in the axial direction on the cross arm 08, each with at least one rolling element 17, wherein the supports 11 can be put into and out of contact with the cylinder 02 independently of each other either individually or in groups by actuating means 19 assigned to them. Thus, it is possible to respectively use a single rolling element 11, or a group of rolling elements 11 selectively for pressing on a defined printing forme.

## List of Reference Numerals

01	Dressing, printing forme
02	Cylinder, forme cylinder
03	Cylinder, counter-pressure cylinder, transfer cylinder
04	Surface area
05	-
06	Opening
07	Beveled edge
08	Holder, cross arm
09	Connecting piece
10	-
11	Support, resilient sheet metal piece
12	End, first
13	Connecting element, screw, rivet
14	-
15	-
16	End, second
17	Rolling element, roll, roller
18	Rotating shaft
19	Actuating means, hollow body, tube
20	-
21	Strip
22	Face
23	Face
a	Spacing